

NMCP COVID-19 Literature Report #34: Friday, 07 August 2020

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Purpose: These now weekly reports, published on Fridays, are curated collections of current research, evidence reviews, and news regarding the COVID-19 pandemic. Please feel free to reach out with questions and suggestions for future topics.

All reports are available online at <https://nmcp.libguides.com/covidreport>. Access is private; you will need to use the direct link or bookmark the URL, along with the case-sensitive password "NMCPfinest".

Disclaimer: I am not a medical professional. This document is current as of the date noted above. While I make every effort to find and summarize available data, things are changing rapidly, with new research and potentially conflicting literature published daily.

Statistics

Global 19,141,627 confirmed cases and 715,803 deaths in 188 countries/regions

*United States**

top 5 states by cases (Virginia is ranked 14th)

	TOTAL US	CA	FL	TX	NY	GA
Confirmed Cases	4,888,070	541,492	510,389	484,232	418,928	204,895
Tested	59,652,675	8,500,463	3,857,363	3,944,480	6,298,805	1,724,762
Recovered	NA	NA	NA	323,804	73,472	NA
Deaths	160,157	10,024	7,747	8,570	32,756	4,026

*see census.gov for current US Population data; NA: not all data available

[JHU CSSE](#) as of 1100 EDT 07 August 2020

<i>Virginia</i>	Total	Chesapeake	Hampton	Newport News	Norfolk	Portsmouth	Suffolk	Virginia Beach
Cases	97,882	2,828	1,173	1,788	3,629	1,726	1,231	4,781
Hospitalized	8,281	225	49	80	187	133	93	229
Deaths	2,317	37	7	18	30	25	49	53

[VA DOH](#) as of 1100 EDT 07 August 2020

Special Reports

[WHO](#): COVID-19 Preparedness and Response Progress Report - 1 February to 30 June 2020 (03 August 2020)

"WHO published the first COVID-19 Strategic Response and Preparedness Plan (SPRP) on 3 February, 2020. This report highlights the main points of progress that were made up to 30 June 2020 under the three objectives outlined in the SPRP: scaling up international coordination and support; scaling up country preparedness and response by pillar; and accelerating research and innovation. The report also discusses some of the key challenges faced so far, and provides an update on the resource requirements for the next phase of WHO's response as part of an unprecedented whole-of-UN approach to the pandemic."

[ICNARC](#): ICNARC report on COVID-19 in critical care (24 July 2020)

This includes data on the first reported 10,624 patients critically ill with COVID-19 in the United Kingdom National Health Service (NHS) system.

"This report presents analyses of data on patients critically ill with confirmed COVID-19 reported to ICNARC up to 4pm on 23 July 2020 from critical care units participating in the Case Mix Programme (the national clinical audit covering all NHS adult, general intensive care and combined intensive care/high dependency units in England, Wales and Northern Ireland, plus some additional specialist and non-NHS critical care units). Please note that adult critical care units in Scotland, paediatric intensive care units and neonatal intensive care units do not participate in the Case Mix Programme."

Evidence Summaries

[CEBM](#): Severe mental illness and risks from COVID-19 (05 August 2020)

- People with severe mental illness (SMI) are a vulnerable population. In the context of COVID-19, there is reason to suspect they may be at increased risk of contracting SARS-CoV-2 and have worse outcomes following infection, however we found no existing data that quantified these risks.
- Public health measures associated with COVID-19, including quarantine of suspected cases and lockdowns may negatively affect the mental health status of people with SMI, through change of environment, disruption of services, increased stress and isolation.
- Existing research points to greater psychological distress during the pandemic for people with SMI, rather than demonstrating this distress is due to the pandemic.

Selected Literature: Peer-Reviewed Journals

Date given is the date published or posted online; often these papers are ahead of print.

07 August 2020

[MMWR](#): COVID-19–Associated Multisystem Inflammatory Syndrome in Children — United States, March–July 2020

"Multisystem inflammatory syndrome in children (MIS-C) is a rare but severe condition that has been reported approximately 2–4 weeks after the onset of COVID-19 in children and adolescents.

Most cases of MIS-C have features of shock, with cardiac involvement, gastrointestinal symptoms, and significantly elevated markers of inflammation, with positive laboratory test results for SARS-CoV-2. Of the 565 patients who underwent SARS-CoV-2 testing, all had a positive test result by RT-PCR or serology.

Distinguishing MIS-C from other severe infectious or inflammatory conditions poses a challenge to clinicians caring for children and adolescents. As the COVID-19 pandemic continues to expand in many jurisdictions, health care provider awareness of MIS-C will facilitate early recognition, early diagnosis, and prompt treatment."

[MMWR](#): Hospitalization Rates and Characteristics of Children Aged <18 Years Hospitalized with Laboratory-Confirmed COVID-19 — COVID-NET, 14 States, March 1–July 25, 2020

"Analysis of pediatric COVID-19 hospitalization data from 14 states found that although the cumulative rate of COVID-19–associated hospitalization among children (8.0 per 100,000 population) is low compared with that in adults (164.5), one in three hospitalized children was admitted to an intensive care unit.

Children are at risk for severe COVID-19. Public health authorities and clinicians should continue to track pediatric SARS-CoV-2 infections. Reinforcement of prevention efforts is essential in congregate settings that serve children, including childcare centers and schools."

[MMWR](#): Characteristics and Outcomes of Contacts of COVID-19 Patients Monitored Using an Automated Symptom Monitoring Tool — Maine, May–June 2020

"Maine found that using automated symptom monitoring as a part of the state's contact tracing program was well received, with the majority of monitored contacts (96.4%) agreeing to automated symptom monitoring. Automated symptom monitoring promptly identified COVID-19 diagnoses among monitored contacts. Among 1,622 persons enrolled into an automated symptom monitoring system, 190 (11.7%) developed COVID-19.

Prompt case investigation can rapidly identify contacts and recommend quarantine, reducing additional exposures and transmission. Automated tools, available in multiple languages and formats, might improve contact tracing programs and reduce resource needs, including staffing."

06 August 2020

[JAMA](#): Prevalence of SARS-CoV-2 Antibodies in Health Care Personnel in the New York City Area

"A 13.7% prevalence of SARS-CoV-2 antibodies in this large cohort study of HCP [health care personnel] in the greater NYC area was similar to that among adults randomly tested in New York State (14.0%) but higher than among adults in Los Angeles (4.1%). HCP in a single hospital in Belgium had lower seroprevalence (6.4%), which was significantly associated only with household contact. In this study, high levels of HCP-reported suspicion of virus exposure and prior positive PCR testing results were most strongly associated with seropositivity."

[JAMA Intern Med](#): Clinical Course and Molecular Viral Shedding Among Asymptomatic and Symptomatic Patients With SARS-CoV-2 Infection in a Community Treatment Center in the Republic of Korea

"Question: Are there viral load differences between asymptomatic and symptomatic patients with severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) infection?

Findings: In this cohort study that included 303 patients with SARS-CoV-2 infection isolated in a community treatment center in the Republic of Korea, 110 (36.3%) were asymptomatic at the time of isolation and 21 of these (19.1%) developed symptoms during isolation. The cycle threshold values of reverse transcription–polymerase chain reaction for SARS-CoV-2 in asymptomatic patients were similar to those in symptomatic patients.

Meaning: Many individuals with SARS-CoV-2 infection remained asymptomatic for a prolonged period, and viral load was similar to that in symptomatic patients; therefore, isolation of infected persons should be performed regardless of symptoms."

[NEJM](#): Preventing a Parallel Pandemic — A National Strategy to Protect Clinicians' Well-Being

"We are calling for several immediate actions to lay the groundwork for a clear and accountable national strategy to safeguard the health and well-being of our clinician workforce..."

FIVE HIGH-PRIORITY ACTIONS TO PROTECT CLINICIANS' WELL-BEING DURING AND AFTER THE COVID-19 CRISIS

Organizational Level

- Integrate the work of chief wellness officers or clinician well-being programs into Covid-19 "command centers" or other organizational decision-making bodies for the duration of the crisis.
- Ensure the psychological safety of clinicians through anonymous reporting mechanisms that allow them to advocate for themselves and their patients without fear of reprisal.
- Sustain and supplement existing well-being programs.

National Level

- Allocate federal funding to care for clinicians who experience physical and mental health effects of Covid-19 service.
- Allocate federal funding to set up a national epidemiologic tracking program to measure clinician well-being and report on the outcomes of interventions.

...We have a brief window of opportunity to get ahead of two pandemics, the spread of the virus today and the harm to clinician well-being tomorrow. If we fail, we will pay the price for years to come. In the race to respond to the Covid-19 crisis, we must not neglect to care for those who care for us."

05 August 2020

[JAMA](#): Attacks on Public Health Officials During COVID-19

Commentary: "Amid a global pandemic that has already claimed more than 150 000 lives in the US, the nation needs strong public health leadership more than ever. Harassment of public health officials must stop; instead, all efforts and attacks should be directed against the virus. Success will require overcoming the inaction and division that have allowed it to spread."

[MMWR](#): Serious Adverse Health Events, Including Death, Associated with Ingesting Alcohol-Based Hand Sanitizers Containing Methanol — Arizona and New Mexico, May–June 2020

"Alcohol-based hand sanitizers should only contain ethanol or isopropanol, but some products imported into the United States have been found to contain methanol.

From May 1 through June 30, 2020, 15 cases of methanol poisoning were reported in Arizona and New Mexico, associated with swallowing alcohol-based hand sanitizers. Four patients died, and three were discharged with visual impairment.

Alcohol-based hand sanitizer products should never be ingested. In patients with compatible signs and symptoms or after having swallowed hand sanitizer, prompt evaluation for methanol poisoning is required. Health departments in all states should coordinate with poison centers to identify cases of methanol poisoning."

Related: [FDA updates on hand sanitizers consumers should not use](#)

Pediatrics: Racial/Ethnic and Socioeconomic Disparities of SARS-CoV-2 Infection Among Children

"Results: Of 1000 children tested for SARS-CoV-2 infection, 20.7% tested positive. In comparison to non-Hispanic (NH)-whites (7.3%), minority children had higher rates of infection (NH-black: 30.0%; adjusted OR 2.3 [95% CI 1.2, 4.4]; Hispanic: 46.4%; adjusted OR 6.3 [95% CI 3.3, 11.9]). In comparison to children in the highest MFI quartile (8.7%), infection rates were higher among children in quartile 3 (23.7%; adjusted OR 2.6 [95% CI 1.4, 4.9]; quartile 2 (27.1%; adjusted OR 2.3 [95% CI 1.2, 4.3], and quartile 1 (37.7%; adjusted OR 2.4 [95% CI 1.3, 4.6]). Rates of reported exposure to SARS-CoV-2 also differed by race/ethnicity and socioeconomic status.

Conclusions: In this large cohort of children tested for SARS-CoV-2 through a community-based testing site, racial/ethnic minorities and socioeconomically disadvantaged children carry the highest burden of infection. Understanding and addressing the causes of these differences are needed to mitigate disparities and limit the spread of infection."

04 August 2020

Ann Intern Med: Annals Graphic Medicine - Dr. Mom: Work-Life Balance

Work-Life Balance: Pandemic Version

In March of 2020 we sent our kids to stay with my mother-in-law who lives 3-hours away in Connecticut.



Then, after 2 months, we brought the kids back. My schedule seemed better, COVID cases were declining, and I had COVID-19 antibodies (although who knows the significance of those!).

Having the kids at home has been...



As we get emails from the hospital administration about "returning to a new normal" I wonder what they envision.



[JAMA Netw Open](#): Prevalence of Health Care Worker Burnout During the Coronavirus Disease 2019 (COVID-19) Pandemic in Japan

"In this study, we found that more than 40% of nurses and more than 30% of radiological technologists and pharmacists met the criteria for burnout. To our knowledge, this was the first report on burnout comparing job categories and associated risk factors among HCWs [healthcare workers] in Japan during a pandemic. The explanation for the higher prevalence of burnout among nonphysicians could be that these job categories have lower dimensions of control (skill discretion and decision authority) compared with physicians. Also, the desire for expectations of appreciation or respect, 1 of the social supports (ie, from supervisor, coworker, and others), may be an important variable in studies exploring the association between job characteristics and burnout. It is essential that team leaders and peers appreciate members' dedicated work through positive messages of gratitude and support."

[Lancet Psychiatry](#): Disaster psychiatry and homelessness: creating a mental health COVID-19 response

"In April, 2020, we created and implemented a mental health disaster response at the Boston Hope Field Hospital (Boston, MA, USA)—a 1000-bed facility for patients testing positive for COVID-19. Of the available beds, 500 were set aside for homeless patients. The paucity of published work on how to address mental health challenges and support the homeless population during disasters created the need to design a new system of care in an evidence-free area of health-care delivery. Our goal was to develop a mental health disaster response that treated psychiatric exacerbations, created a therapeutic social environment with regular groups and daily activities, and prevented undesirable outcomes such as overdoses and suicide attempts. In designing this response, we sought to apply the principles of psychological first aid (PFA), the standard-of-care framework for disaster psychiatry, to our homeless population."

03 August 2020

[JAMA Intern Med](#): Trends in Emergency Department Visits and Hospital Admissions in Health Care Systems in 5 States in the First Months of the COVID-19 Pandemic in the US

"Question: How did emergency department visits and hospitalizations change as the coronavirus disease 2019 (COVID-19) pandemic intensified in the US?

Findings: In this cross-sectional study of 24 emergency departments in 5 health care systems in Colorado, Connecticut, Massachusetts, New York, and North Carolina, decreases in emergency department visits ranged from 41.5% in Colorado to 63.5% in New York, with the most rapid rates of decrease in visits occurring in early March 2020. Rates of hospital admissions from the ED were stable until new COVID-19 case rates began to increase locally, at which point relative increases in hospital admission rates ranged from 22.0% to 149.0%.

Meaning: The findings suggest that clinicians and public health officials should emphasize to patients the importance of continuing to visit the emergency department for serious symptoms, illnesses, and injuries that cannot be managed in other clinical settings."

[JAMA Ophthalmol](#): Detection of Coronavirus Disease 2019 Viral Material on Environmental Surfaces of an Ophthalmology Examination Room

"Question: Do ophthalmologists run the risk of encountering individuals who are asymptotically carrying severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) when maintaining elective examinations during the coronavirus disease 2019 pandemic?

Finding: In this quality improvement study of samples from 1 examination room, slitlamp breath shield and phoropter surface samples were analyzed by real-time polymerase chain reaction. In 2 of 7 postexamination samples, SARS-CoV-2 viral material was found.

Meaning: Despite triage systems to exclude patients with coronavirus disease 2019, viral material was found on ophthalmology examination room surfaces; however, the infectivity of the virus samples was unknown."

[Lancet Child Adolesc Health](#): Transmission of SARS-CoV-2 in Australian educational settings: a prospective cohort study

"We examined SARS-CoV-2 transmission among children and adults in 25 educational settings (primary and secondary schools, and early childhood education and care settings) together with the rate and characteristics of all paediatric COVID-19 cases in the Australian state of New South Wales over a 3-month period. We found a low incidence of attendance of children and staff members with COVID-19 at educational facilities, and low rates of SARS-CoV-2 transmission in the 15 schools and childcare settings where a case occurred. The exception was an outbreak in a childcare centre. The use of enhanced surveillance and serological testing of close contacts within the educational setting enabled detection of a small number of asymptomatic SARS-CoV-2 secondary infections in schools and the childcare setting.

This is the first comprehensive population-based assessment of SARS-CoV-2 transmission among children and adults in educational facilities. Our results show that where effective case-contact testing and epidemic control strategies exist for the population, children and teachers did not contribute significantly to COVID-19 transmission via attendance in educational settings. This study will assist modellers, policy makers, health-care providers, and the public to understand the risk of COVID-19 occurring in educational facilities and help in decision making around school closures and reopenings. Our data also provide insights that can assist in comparing the economic and community costs of school closures against the potential benefits of reduced virus transmission."

01 August 2020

[Lett Spatial Res Sci](#): The spatial econometrics of the coronavirus pandemic

"In this paper we use spatial econometric specifications to model daily infection rates of COVID-19 across countries. Using recent advances in Bayesian spatial econometric techniques, we particularly focus on the time-dependent importance of alternative spatial linkage structures such as the number of flight connections, relationships in international trade, and common borders. The flexible model setup allows to study the intensity and type of spatial spillover structures over time. Our results show notable spatial spillover mechanisms in the early stages of the virus with international flight linkages as the main transmission channel. In later stages, our model shows a sharp drop in the intensity spatial spillovers due to national travel bans, indicating that travel restrictions led to a reduction of cross-country spillovers."

Translation: Air travel allows viral spread between countries and continents in a short period of time and closing cross-border air traffic can slow down that process.

31 July 2020

[Lancet Public Health](#): Risk of COVID-19 among front-line health-care workers and the general community: a prospective cohort study

"We did a prospective observational study of 2 135 190 individuals, comprised of front-line health-care workers and the general community who were voluntary users of the COVID Symptom Study smartphone application (app). From self-reported data obtained via this app, we found that front-line health-care workers had at least a threefold increased risk of COVID-19. Compared with front-line health-care workers who reported adequate availability of PPE, those with inadequate PPE had an increase in risk. However, adequate availability of PPE did not seem to completely reduce risk among health-care workers caring for patients with COVID-19. We also found that Black, Asian, and minority ethnic health-care workers might be disproportionately affected.

Front-line health-care workers, particularly those who are from Black, Asian, and minority ethnic backgrounds, could be at substantially greater risk of COVID-19. Health-care systems should ensure adequate availability of PPE and develop additional strategies to protect health-care workers from COVID-19."

This was previously posted 25 May 2020 as a preprint on medRxiv; see:

<https://www.medrxiv.org/content/10.1101/2020.04.29.20084111v6>

[MMWR](#): SARS-CoV-2 Transmission and Infection Among Attendees of an Overnight Camp — Georgia, June 2020

"These findings demonstrate that SARS-CoV-2 spread efficiently in a youth-centric overnight setting, resulting in high attack rates among persons in all age groups, despite efforts by

camp officials to implement most recommended strategies to prevent transmission. Asymptomatic infection was common and potentially contributed to undetected transmission, as has been previously reported. This investigation adds to the body of evidence demonstrating that children of all ages are susceptible to SARS-CoV-2 infection and, contrary to early reports, might play an important role in transmission."

30 July 2020

[JAMA](#): COVID-19 and Dexamethasone: A Potential Strategy to Avoid Steroid-Related *Strongyloides* Hyperinfection

"In patients at risk of strongyloidiasis who receive dexamethasone without being tested or treated for *Strongyloides*, clinicians should include *Strongyloides* hyperinfection syndrome on the differential diagnosis for patients who experience acute clinical decompensation, especially if gram-negative rod bacteremia or central nervous system infection is detected.

Strongyloides hyperinfection syndrome is potentially catastrophic to patients. It is possible that as dexamethasone becomes more widely prescribed for individuals with COVID-19, a substantial number of patients may be at risk. This iatrogenic potentially fatal complication is avoidable. Clinicians and health care systems should consider implementing a strategy to prevent hyperinfection syndrome in patients with COVID-19 who are at risk for strongyloidiasis and are candidates for dexamethasone therapy."

[JAMA Otolaryngol Head Neck Surg](#): Risk of SARS-CoV-2 Transmission During Flexible Laryngoscopy: A Systematic Review

"Question: What is the evidence for minimizing the use of flexible laryngoscopy during the coronavirus disease 2019 pandemic?

Findings: This systematic review found a paucity of data regarding the risks of severe acute respiratory syndrome coronavirus 2 aerosolization and transmission during endoscopic procedures of the aerodigestive tract. Aggregate data suggested a decreased risk in endoscopic procedures compared with other aerosol-generating procedures such as intubation; use of proper personal protective equipment also diminished the risk for nosocomial transmission during upper airway procedures.

Meaning: Although more clinical and basic science research is needed to formalize conclusions, flexible laryngoscopy can likely be performed safely during the coronavirus disease 2019 pandemic with appropriate precautionary measures."

[JAMA Pediatr](#): Age-Related Differences in Nasopharyngeal Severe Acute Respiratory Syndrome Coronavirus 2 (SARS-CoV-2) Levels in Patients With Mild to Moderate Coronavirus Disease 2019 (COVID-19)

"Our analyses suggest children younger than 5 years with mild to moderate COVID-19 have high amounts of SARS-CoV-2 viral RNA in their nasopharynx compared with older children

and adults. Our study is limited to detection of viral nucleic acid, rather than infectious virus, although SARS-CoV-2 pediatric studies reported a correlation between higher nucleic acid levels and the ability to culture infectious virus. Thus, young children can potentially be important drivers of SARS-CoV-2 spread in the general population, as has been demonstrated with respiratory syncytial virus, where children with high viral loads are more likely to transmit. Behavioral habits of young children and close quarters in school and day care settings raise concern for SARS-CoV-2 amplification in this population as public health restrictions are eased. In addition to public health implications, this population will be important for targeting immunization efforts as SARS-CoV-2 vaccines become available."

29 July 2020

[Ann Intern Med](#): Body Mass Index and Risk for Intubation or Death in SARS-CoV-2 Infection: A Retrospective Cohort Study

"Setting: A quaternary academic medical center and community hospital in New York City.

Participants: 2466 adults hospitalized with laboratory-confirmed severe acute respiratory syndrome coronavirus 2 infection over a 45-day period with at least 47 days of in-hospital observation.

Measurements: Body mass index (BMI), admission biomarkers of inflammation (C-reactive protein [CRP] level and erythrocyte sedimentation rate [ESR]), cardiac injury (troponin level), and fibrinolysis (D-dimer level). The primary end point was a composite of intubation or death in time-to-event analysis.

Results: Over a median hospital length of stay of 7 days (interquartile range, 3 to 14) days, 533 patients (22%) were intubated, 627 (25%) died, and 59 (2%) remained hospitalized. Compared with overweight patients, patients with obesity had higher risk for intubation or death, with the highest risk among those with class 3 obesity (hazard ratio, 1.6 [95% CI, 1.1 to 2.1]). This association was primarily observed among patients younger than 65 years and not in older patients (P for interaction by age = 0.042). Body mass index was not associated with admission levels of biomarkers of inflammation, cardiac injury, or fibrinolysis....

Conclusion: Obesity is associated with increased risk for intubation or death from COVID-19 in adults younger than 65 years, but not in adults aged 65 years or older."

[Endocrinology](#): COVID-19 and Hypercoagulability: Potential Impact on Management with Oral Contraceptives, Estrogen Therapy and Pregnancy

"As this Commentary is being submitted, no reports of increased incidence of VTEs [venous thromboembolic events] in pregnant women or women taking estrogen preparations who also have COVID-19 have emerged. However, a preliminary report indicates that vascular abnormalities in the placenta can accompany SARS-CoV-2 infection. Many uncertainties remain regarding the effects of both SARS-CoV-2 and estrogen on coagulation. The

emergence of this pandemic and the curious impact of this virus on hypercoagulability emphasize the continuing need for additional research into coagulation pathology in women."

27 July 2020

[Ann Intern Med](#): Desperate Times: Protecting the Public From Research Without Consent or Oversight During Public Health Emergencies

"COVID-19 is an international public health emergency. However, we should not invoke the Common Rule's public health surveillance exclusion, under questionable pretenses, when there is clearly also a research intent, whether extant or downstream. Storage of data and biological specimens for future research should occur with informed consent. Activities that are truly research should be regulated as such, and public health surveillance should be done with consent if possible. We must execute good governance of the public health surveillance and emergency response infrastructure to maintain the public trust and avoid repeating research abuses of the past."

ICYMI (In Case You Missed It)

[Pediatrics](#): Novel Coronavirus Infection in Febrile Infants Aged 60 Days and Younger (published online 11 June 2020; in August print journal)

"In this case series, we describe the clinical course and outcomes of 7 febrile infants aged ≤ 60 days with confirmed severe acute respiratory syndrome coronavirus 2 infection. No infant had severe outcomes, including the need for mechanical ventilation or ICU level of care. Two infants had concurrent urinary tract infections, which were treated with antibiotics. Although a small sample, our data suggest that febrile infants with severe acute respiratory syndrome coronavirus 2 infection often have mild illness."

Selected Literature: Preprints

Preprints are found on preprint servers; [arXiv](#), [bioRxiv](#), and [medRxiv](#) are commonly used for biomedical research. Per medRxiv:

"Preprints are preliminary reports of work that have not been certified by peer review. They should not be relied on to guide clinical practice or health-related behavior and should not be reported in news media as established information."

Preprints may later be published in peer-reviewed journals.

[medRxiv](#): Covid-19 Risk Among Airline Passengers: Should the Middle Seat Stay Empty? (posted 02 August 2020)

"We use recent data and research results to approximate the probability that an air traveler in coach will contract Covid-19 on a US domestic flight two hours long, both when all coach seats are full and when all but middle seats are full. The point estimates we reach based on data from late June 2020 are 1 in 4,300 for full flights and 1 in 7,700 when middle seats are kept empty. These estimates are subject to both quantifiable and nonquantifiable sources of uncertainty, and sustain known margins of error of a factor about 2.5. However, because uncertainties in key parameters affect both risk estimates the same way, they leave the relative risk ratio for fill all seats compared to middle seat open close to 1.8 (i.e., close to $1/4,300)/(1/7,700)$). We estimate the mortality risks caused by Covid-19 infections contracted on airplanes, taking into account that infected passengers can in turn infect others. The point estimates, which use 2019 data about the percentage of seats actually occupied on US flights, range from one death per 400,000 passengers to one death per 600,000. These death-risk levels are considerably higher than those associated with plane crashes but comparable to those arising from two hours of everyday activities during the pandemic."

[medRxiv](#): Evidence favouring the efficacy of convalescent plasma for COVID-19 therapy (posted 30 July 2020)

"To determine the effect of COVID-19 convalescent plasma on mortality, we aggregated patient outcome data from randomized clinical trials, matched control, and case-series studies. Fixed-effects analyses demonstrated that hospitalized COVID-19 patients transfused with convalescent plasma exhibited a 57% reduction in mortality rate (13%) compared to matched-patients receiving standard treatments (25%; OR: 0.43, $P < 0.001$). These data provide evidence favouring the efficacy of human convalescent plasma as a therapeutic agent in hospitalized COVID-19 patients."

[medRxiv](#): SARS-CoV-2, SARS-CoV-1 and MERS-CoV viral load dynamics, duration of viral shedding and infectiousness: a living systematic review and meta-analysis (posted 29 July 2020)

"Background: Viral load kinetics and the duration of viral shedding are important determinants for disease transmission. We aim i) to characterise viral load dynamics, duration of viral RNA, and viable virus shedding of SARS-CoV-2 in various body fluids and ii) to compare SARS-CoV-2 viral dynamics with SARS-CoV-1 and MERS-CoV."

Methods: Medline, EMBASE, Europe PMC, preprint servers and grey literature were searched to retrieve all articles reporting viral dynamics and duration of SARS-CoV-2, SARS-CoV-1 and MERS-CoV shedding. We excluded case reports and case series with < 5 patients, or studies that did not report shedding duration from symptom onset. PROSPERO registration: CRD42020181914.

Findings: Seventy-nine studies on SARS-CoV-2, 8 on SARS-CoV-1, and 11 on MERS-CoV were included. Mean SARS-CoV-2 RNA shedding duration in upper respiratory tract, lower respiratory tract, stool and serum were 17.0, 14.6, 17.2 and 16.6 days, respectively. Maximum duration of SARS-CoV-2 RNA shedding reported in URT, LRT, stool and serum was 83, 59, 35 and 60 days, respectively. Pooled mean duration of SARS-CoV-2 RNA shedding was positively associated with age ($p=0.002$), but not gender ($p = 0.277$). No study to date has detected live virus beyond day nine of illness despite persistently high viral loads. SARS-CoV-2 viral load in the upper respiratory tract appears to peak in the first week of illness, while SARS-CoV-1 and MERS-CoV peak later.

Conclusion: Although SARS-CoV-2 RNA shedding in respiratory and stool can be prolonged, duration of viable virus is relatively short-lived. Thus, detection of viral RNA cannot be used to infer infectiousness. High SARS-CoV-2 titres are detectable in the first week of illness with an early peak observed at symptom onset to day 5 of illness. This review underscores the importance of early case finding and isolation, as well as public education on the spectrum of illness. However, given potential delays in the isolation of patients, effective containment of SARS-CoV-2 may be challenging even with an early detection and isolation strategy."

[medRxiv](#): Clinical Outcomes With the Use of Prophylactic Versus Therapeutic Anticoagulation in COVID-19 (posted 26 July 2020)

"Background: This study is the first of its kind to assess the impact of preemptive therapeutic dose anticoagulation on mortality compared to prophylactic anticoagulation among COVID-19 patients. Its findings provide insight to clinicians regarding the management of COVID-19, particularly with the known prothrombotic state.

Research Question: To determine the impact of anticoagulation on in-hospital mortality among COVID-19 positive patients with the a priori hypothesis that there would be a lower risk of in-hospital mortality with use of preemptive therapeutic over prophylactic dose enoxaparin or heparin.

Study Design: Retrospective cohort study from April 1 - April 25, 2020. The date of final follow-up was June 12, 2020.

Setting: Two large, acute care hospitals in Western Connecticut.

Participants: Five hundred and one inpatients were identified after discharge as 18 years or older and positive for SARS-CoV-2. The final sample size included 374 patients after applying exclusion criteria. Demographic variables were collected via hospital billing inquiries, while the clinical variables were abstracted from patients medical records.

Exposure: Preemptive enoxaparin or heparin at a therapeutic or prophylactic dose. Main Outcome: In-hospital mortality.

Results: When comparing preemptive therapeutic to prophylactic anticoagulation through multi-variable analysis, risk of in-hospital mortality was 2.3 times greater in patients receiving preemptive therapeutic anticoagulation (95% CI = 1.0, 4.9; p = 0.04).

Interpretation: An increase in in-hospital mortality was observed with preemptive therapeutic anticoagulation. Thus, in the management of COVID-19 and its complications, we recommend further research and cautious use of preemptive therapeutic over prophylactic anticoagulation."

Events (Webinars, Calls, etc.)

JAMA: Coronavirus Q&A with Anthony Fauci: <https://youtu.be/8PgmAWgiL1A>

"Anthony Fauci, MD, White House Coronavirus Task Force member and Director of the National Institutes of Allergy and Infectious Diseases, discusses latest developments in the COVID-19 pandemic. Recorded August 3, 2020.

Earn Free CME credits by watching JAMA Livestreams and completing a brief questionnaire. Claim 0.5 credits for each video at <https://ja.ma/covidqa>.

Topics discussed in this interview:

- 0:00 Introduction
- 0:17 What should we expect in the next month?
- 3:11 Masking etiquette
- 5:54 Face shields and goggles for COVID-19
- 7:08 Recent data about children and COVID-19
- 10:28 Aerosolization, droplets, and recirculated air
- 13:51 Vaccine approval and transparency
- 16:32 Early vaccine trial data and press releases
- 17:35 Vaccine-associated enhanced respiratory disease
- 19:55 COVID-19 treatments and therapies
- 22:45 COVID-19, influenza, and the Fall
- 25:08 Successes (so far) in this pandemic
- 27:23 What could we have done better as a nation?
- 28:46 Baseball"

WHAT: FDA: Virtual Town Hall Series - Immediately in Effect Guidance on Coronavirus (COVID-19) Diagnostic Tests

WHEN: Wednesday, 12 August 2020 1215-1315 ET

TOPIC: "The U.S. Food and Drug Administration (FDA) will host a virtual Town Hall for clinical laboratories and commercial manufacturers that are developing or have developed diagnostic tests for SARS-CoV-2. The purpose of this Town Hall is to help answer technical questions about the development and validation of tests for SARS-CoV-2."

DETAILS: <https://www.fda.gov/medical-devices/workshops-conferences-medical-devices/virtual-town-hall-series-immediately-effect-guidance-coronavirus-covid-19-diagnostic-tests-08122020>

News in Brief

Virginia has a smartphone app (called [Covidwise](#)) that will send notifications if you were potentially exposed to coronavirus; it is the first state to use the contact tracing technology developed by Apple and Google ([CNBC](#)).

What have we learned about this pandemic so far? According to this opinion article, nine important things: 1) outbreaks can happen anywhere; 2) COVID-19 can sicken and kill anyone; 3) the main danger isn't contaminated surfaces; 4) the virus is in the air; 5) many asymptomatic cases; 6) it's not just seasonal; 7) masks work; 8) racism, not race, is a factor; and 9) misinformation kills ([SciAm](#)).

How Others Are Handling the Outbreak

New York City is setting up quarantine checkpoints at key entry points for travelers from outbreak hotspots ([NPR](#)).

To head off a potential second wave, Germany is testing anyone entering coming from a 'hot zone' ([NYT](#)).

Melbourne, Australia is dealing with a second wave of infections, and this time lockdown means more restrictions to curb infections ([NYT](#)).

In Norway, at least 40 passengers on a Norwegian cruise ship have tested positive for the coronavirus ([BBC](#)).

A data leak and investigation suggests the number of deaths from coronavirus in Iran is nearly three times Iranian government reports ([BBC](#)).

Sweden flattened its curve without a lockdown; a 'good enough' strategy may work, but the effects may not last ([Medpage](#)).

The WHO offers some advice and public health considerations with traveling internationally ([WHO](#)).

Transmission, Testing, and Tracing

A computer model based on the Diamond Princess outbreak found that coronavirus spread in microscopic, aerosolized droplets ([NYT](#)).

As coronavirus cases surge, the number of people trained to do contact tracing has not kept up with needs ([NPR](#)).

Long read: "The mystery of why some people keep testing positive for COVID-19" ([Elemental](#)).

Research and Data

The NIH has started a randomized control trial testing remdesivir plus interferon beta-1a for COVID-19; this is the third iteration of NIAID's Adaptive COVID-19 Treatment Trial (ACTT) ([NIH](#)).

Clinical trials need more minorities enrolling – maybe they should be asked to participate more ([Medpage](#)).

Long read: "How many people in the U.S. are hospitalized with COVID-19? Who knows?" ([ProPublica](#))

Long read: "Nobody accurately tracks health care workers lost to COVID-19. So she stays up at night cataloging the dead." ([ProPublica](#))

Vaccines

From adenovirus vectors to mRNA vaccines, here's what we know about COVID-19 vaccines ([Medpage](#)).

A COVID-19 vaccine is needed, but it won't change things right away ([WaPo](#)).

The US government will pay Johnson & Johnson over \$1 billion for 100 million doses of its potential COVID-19 vaccine ([Reuters](#)).

The Bill and Melinda Gates Foundation is partnering with the Serum Institute of India to produce a \$3 per dose coronavirus vaccine ([FC](#)).

A group of biohackers in Boston – including a Harvard geneticist – are testing a homemade SARS-CoV-2 vaccine on themselves ([MIT](#)).

Ripple Effects

"The American food system is not broken -- it is functioning as designed, a system optimized for efficiency, not one optimized for resilience and nutrition. But our food system is killing us, and that happened long before COVID-19. It is bound to continue unless we take steps now to leverage food as medicine." ([CNN](#))

The long-term effects of COVID-19 range from 'brain fog' to chronic pain to cardiac problems, and scientists aren't sure why ([Science](#)).

Telehealth may be a key feature of healthcare during the pandemic, but reliance on it as a tool could be leaving patients behind – many older or with limited technological options – and increase health inequities ([Medpage](#)).

Graphic medicine: A neurological research nurse shares his COVID-19 experience ([Nib](#)).

Long read: "The shadow pandemic: how do we help domestic-violence victims who stay with their partners?" ([Atlantic](#))

Mis/Disinformation

A survey of Americans found 71% have heard about the conspiracy theory that powerful people planned the pandemic; 20% of those who are familiar with it say it is probably true, and 5% say it is definitely true ([Pew](#)).

Russia disinformation and pro-Kremlin English-language websites actively push conspiracy theories and false information about the COVID-19 pandemic, according to a State Department report ([Defense One](#)).

Health (il)literacy is not new, but the pandemic has magnified problems associated with lack of understanding medical information ([WaPo](#)).

Freaking out over news and other pandemic information sources? Disinformation expert Carl Bergstrom has tips on how to stay calm and make sense of everything ([SciAm](#)).

Other Infectious Diseases and Outbreaks

The first case of bacterial meningitis caused by beta-lactamase–producing, ciprofloxacin-resistant *Neisseria meningitidis* in the United States has been reported in a 5-month-old boy ([CIDRAP](#); see [J Pediatr Infect Dis Soc](#) for full text).

Two more cases of West Nile virus in humans have been found in Miami ([ONT](#)).

The latest Ebola outbreak in the DRC includes 74 cases (70 confirmed) with 32 deaths and 27 recovered ([WHOAFRO](#)).

A free-range egg farm in Victoria, Australia has an outbreak of avian influenza H7N7 ([ONT](#)).

Red onions are probably to blame for a multistate outbreak of *Salmonella* Newport infections ([CDC](#)).

Long read: Tuberculosis, HIV, and malaria – infectious monsters are spreading, and the coronavirus is not necessarily the deadliest or most concerning long term ([NYT](#)).

Thanks, Dr. Fauci

"After each long day of working on the United States' pandemic response, the nation's top infectious-disease expert power-walks through his Northwest Washington neighborhood with

his wife and their daughter's dog." Now his neighbors are showing their appreciation for his pandemic work with yard signs ([WaPo](#)).

Another interesting bit of "day in the life" of Dr. Fauci: During a presentation to medical librarians, a McGraw-Hill publisher representative mentioned that Dr. Fauci still spends his weekends editing chapters for the next edition of *Harrison's Principles of Internal Medicine*.

More Long Reads

"Two decades of pandemic war games failed to account for Donald Trump" ([Nature](#)).

"How the pandemic defeated America" ([Atlantic](#)).

"How the pandemic might play out in 2021 and beyond" ([Nature](#)).

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